

Serial No. 09/981,453  
Preliminary Amendment RCE

Filed On: October 18, 2001

**Amendments to the Claims:**

The listing of Claims will replace all prior versions and listings of the Claims in the application:

**Listing of Claims**

1. – 20. (Canceled)

21. (Currently Amended) A method of operating a business services application for retrieving data with delivery technologies, the method comprising:

- a) developing custom application code in a subclass of a BusinessService class, the custom application code responsive to a request for data initiated by the delivery technologies;
- b) translating the request to a first document object model document with an ApiService class;
- e) selectively limiting the data structure of the first document object model document with a Message class and a Field class during the translation;
- e) executing the custom application code to retrieve data based on the first document object model document;
- e) reading data into a second document object model document with the ApiService class;
- f) while the data is read in, selectively limiting the data structure of the second document object model document with the Message class and the Field class; and
- g) translating the second document object model document with the ApiService class based on the delivery technology.

22. (Currently Amended) The method of claim 21, wherein selectively limiting the data structure of the first document object model document ~~e)~~ comprises setting a plurality of text nodes within the first document object model document to a unit of data identified by a tag in the request.

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23. (Currently Amended) The method of claim 22, wherein selectively limiting the data structure of the first document object model document-e) further comprises limiting the unit of data to a predetermined datatype.
24. (Currently Amended) The method of claim 23, wherein selectively limiting the data structure of the first document object model document-e) further comprises limiting the predetermined datatype to a string.
25. (Currently Amended) The method of claim 21, wherein selectively limiting the data structure of the first document object model document-e) comprises setting an attribute node within the first document object model document to an attribute identified by a request name parameter in the request.
26. (Original) The method of claim 21, further comprising selecting, as a function of a mode debug flag, one of a short field name and a long field name for each of a plurality of fields in the first and second document object model documents.
27. (Currently Amended) The method of claim 21, wherein translating the requestb) comprises representing an input message with the first document object model document.
28. (Currently Amended) The method of claim 21, wherein reading data into a second document object modele) comprises representing an output message with the second document object model document.
29. (Currently Amended) The method of claim 21, wherein selectively limiting the data structure of the second document object model document-f) comprises setting, based on a datatype, a plurality of text nodes within the second document object model document to data read in to the second document object model document.

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30. (Currently Amended) The method of claim 21, wherein selectively limiting the data structure of the second document object model document-f) comprises setting, as a function of a datatype, an attribute node within the second document object model document to an attribute read in to the second document object model document with the data.

31. (Currently Amended) The method of claim 30, wherein the attribute comprises an attribute name and an attribute value and selectively limiting the data structure of the second document object model document-f) further comprises limiting the attribute value to a predetermined datatype.

32. (Currently Amended) The method of claim 21, wherein translating the second document object modelg) comprises translating the second document object model document to extensible markup language text.

33. (Currently Amended) The method of claim 21, wherein translating the second document object modelg) comprises translating the second document object model document to at least one of a hypertext markup language and a website meta language as a function of at least one extensible stylesheet language stylesheet.

34. – 40. (Canceled)

41. (Currently Amended) A system for leveraging extensible markup language technology to provide an interface between a back-end systems layer and a front-end systems layer, the system comprising:

a server computer;

an ApiService class operable within the server computer to direct the translation of a request to an input message;

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a document object model class operable within the server computer to represent the input message as a document object model document;

a Message class and a Field class operable within the server computer as wrapper of the document object model class to restrict manipulation and standardize the content of the document object model document; and

a BusinessService class operable within the server computer to direct the execution of custom application code as a function of the input message.

42. (Currently Amended) The system of claim 41, wherein the custom application code is operable to process the input message to retrieve data, the data translatable with the document object model class, the Message class and the Field class to an output message in the form of a document object model document with restricted manipulation and standardized content.

43. (Previously Presented) The system of claim 42, wherein the ApiService class is operable to direct the conversion of the output message to a presentation format defined by the request.

44. (Previously Presented) The system of claim 41, wherein the input message and the output message comprises a root element and a plurality of sub-elements.

45. (Previously Presented) The system of claim 41, further comprising a Fldtypes class operable within the server computer, wherein the Fldtypes class comprises definitions of the format of datatypes for fields within the input message.

46. (Previously Presented) The system of claim 41, wherein the document object model document comprises a plurality of field names, the field names selectable with a mode debug flag as one of a first field name and a second field name.

47. (Previously Presented) The system of claim 46, wherein the first field name and the second field name are defined in a MESSAGEDEFINITION class operable within the server computer.

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48. (Previously Presented) The system of claim 41, wherein the document object model class comprises a Document class, a document object model Element class and a plurality of ProcessingInstruction classes, the Message class operable as a wrapper of the Document class, the document object model Element class and the Processing Instruction classes.

49. (Previously Presented) The system of claim 41, wherein the document object model class comprises a document object model setAttribute method, Field class operable as a wrapper of the document object model setAttribute method.

50. (Previously Presented) The system of claim 41, wherein the BusinessService class comprises a subclass of custom application code responsive to the request.

51. (New) A method of leveraging extensible markup language technology to interface a front-end systems layer with a back-end systems layer, the method comprising:

receiving one of a plurality of predetermined requests initiated with any one of a plurality of delivery technologies;

converting the request to a plurality of fields based on request parameters included in the request;

limiting a datatype of data included in the fields to a predefined group of datatypes;

extracting the request parameters based on the datatype; and

accessing data responsive to the request based on the extracted request parameters.

52. (New) The method of claim 51, wherein the datatype of data included in the fields is predefined by the request.

53. (New) The method of claim 51, wherein the datatype of data included in the fields is loaded from a static declaration of the datatype included in a MESSAGEDEFINITION class.

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54. (New) The method of claim 51, wherein converting the request comprises translating the request to extensible markup language structure that is limited to the predefined group of datatypes.
55. (New) The method of claim 51, further comprising converting the data responsive to the request into a plurality of fields with a datatype that is limited to the predefined group of datatypes based on the request parameters, and translating the fields into a format indicated by the request to be compatible with the one of the delivery technologies that made the request.
56. (New) The method of claim 51, wherein converting the request comprises translating the request into a document object model document having a predefined name that is included in the request and a plurality of tags having attributes indicative of a corresponding datatype.
57. (New) The method of claim 56, further comprising translating the data responsive to the request into another document object model document to represent an output message with datatypes that are limited to the group of predefined datatypes, and converting the another document object model into a format indicated by the request to be compatible with the one of the delivery technologies that made the request.
58. (New) The method of claim 51, wherein limiting the datatype comprises limiting the data to representation as one of integer, long, Boolean, string and group.
59. (New) The method of claim 51, further comprising generating a structure for a response to the request in extensible mark up language that includes the data responsive to the request, wherein, in the response, the data responsive to the request is limited to the predefined group of datatypes.

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60. (New) The method of claim 51, wherein accessing data responsive to the request comprises limiting the data responsive to the request that is retrieved to representation as one of integer, long, Boolean, string and group.

61. (New) The method of claim 51 further comprising:  
converting the data responsive to the request to a plurality of fields based on a datatype of the data responsive to the request;  
limiting the datatype of the data responsive to the request included in the fields to one of a predefined group of datatypes; and  
providing the data responsive to the request as a response.

62. (New) The method of claim 51, wherein extracting the request parameters comprises executing custom application code that is responsive to a request name included in the request.

63. (New) The method of claim 62, wherein executing custom application code comprises setting the root element to a message name as a function of the request name parameter.

64. (New) An e-commerce architecture for providing a framework to interface delivery technologies with data, the e-commerce architecture comprising:  
a server computer operable to execute instructions to convert a request to a first document object model document in an extensible markup language, the first document object model document comprising a plurality of request parameters extracted from the request;  
the server computer operable to execute instructions to restrict the conversion to the first document object model document to standardize the content and limit a manipulative capability of the extensible markup language within a document object model class;  
the server computer operable to execute instructions to retrieve data responsive to the request and convert the data to a second document object model document in the extensible markup language based on the request parameters; and

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the server computer operable to execute instructions to restrict the conversion of the data to the second document object model document to similarly standardize the content and limit the manipulative capability of the extensible markup language within the document object model class.

65. (New) The e-commerce architecture of claim 64, wherein the instructions to restrict the conversion of the first and second document object model documents further comprise instructions executable by the server computer to identify the first and second document object model documents with a predefined name included in the request.

66. (New) The e-commerce architecture of claim 64, wherein the instructions to restrict the conversion of the first and second document object model documents further comprise instructions executable by the server computer to create a plurality of element nodes and populate a plurality of corresponding text nodes with the respective request parameters and the respective data.

67. (New) The e-commerce architecture of claim 66, wherein the instructions to restrict the conversion of the first and second document object model documents further comprise instructions executable by the server computer to define a datatype of each of the text nodes from among a predefined group of datatypes.

68. (New) The e-commerce architecture of claim 64, wherein the instructions to restrict the conversion comprises a Message class operable as a wrapper of a plurality of classes within the document object model class that include a document class and a document object model element class.



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69. (New) The e-commerce architecture of claim 64, wherein the instructions to restrict the conversion comprises a Field class operable as a wrapper of a document object model setAttribute method in a document object model element class.

70. (New) The e-commerce architecture of claim 64, wherein the instructions to retrieve data responsive to the request are identified with a request name that is included in the request.

71. (New) The method of claim 21, wherein selectively limiting the data structure of the first document object model comprises standardizing the format of the document object model to be substantially similar for a similar request received from any one of the delivery technologies.

72. (New) The method of claim 71, wherein selectively limiting the data structure of the second document object model comprises standardizing the format of the second document object model to be compatible with any one of the delivery technologies.

73. (New) The method of claim 72, wherein executing the custom application code comprises executing the same custom application code for a similar request from any one of the delivery technologies to provide a response.

74. (New) The method of claim 21, wherein executing the custom application code comprises executing the same custom application code for a similar request from any one of the delivery technologies.

75. (New) The method of claim 74, wherein while the data is read in, selectively limiting the data structure of the second document object model document comprises similarly limiting the second document object model in response to similar requests from any of the delivery technologies.

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76. (New) The system of claim 41, wherein the Message class and the Field class are operable during representation of the input message as the document object model document to restrict manipulation of the document object model document.

77. (New) The system of claim 41, wherein the Message class is operable to restrict creation of the element nodes and population of the corresponding text nodes and the Field class is operable to restrict the data types of text and attribute nodes included in the first document object model document.

78. (New) The system of claim 41, wherein the Message class and the Field class are operable to limit a datatype of fields included in the document object model document to a predetermined group of datatypes.

79. (New) The method of claim 78, wherein the predetermined group of datatypes are selected from the group consisting of integer, long, Boolean, string and group.